# Simulation and Modeling for Acquisition, Requirements & Training (SMART)

Presented to

## MITRE Technical Exchange Meeting

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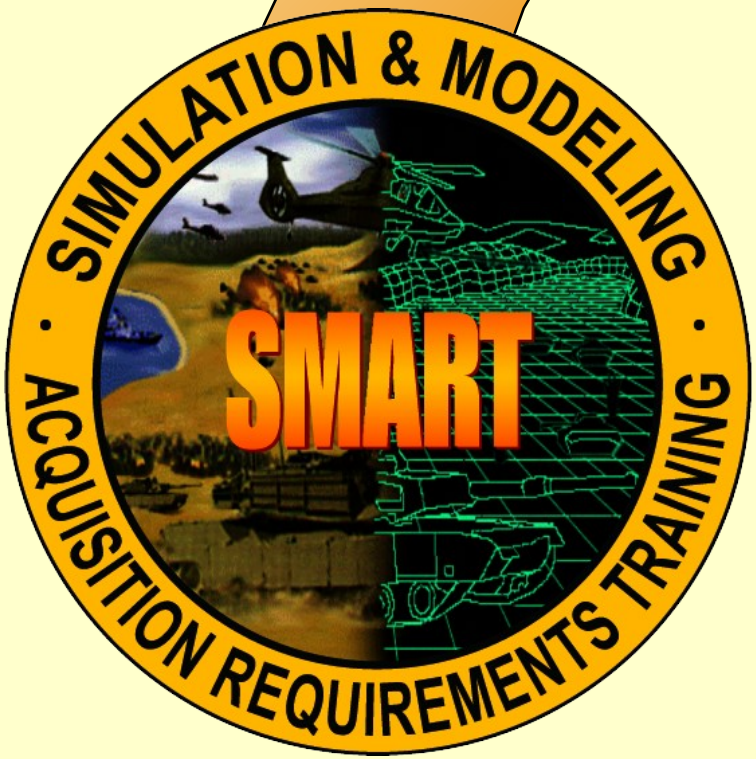
# Overview

- Context
- SMART Concept
- SMART Initiative
- Army Transformation
  - Future Combat Systems
- Best Practices

# SMART Definition




**SMART is a process in which we capitalize on Modeling and Simulation (M&S) technology to address the issue of system development and life-cycle costs through the combined efforts of the requirements, training and acquisition communities.**

# The Army's Transformation

**Today's Army is well equipped to fight the last war but the of the future will be more complex**

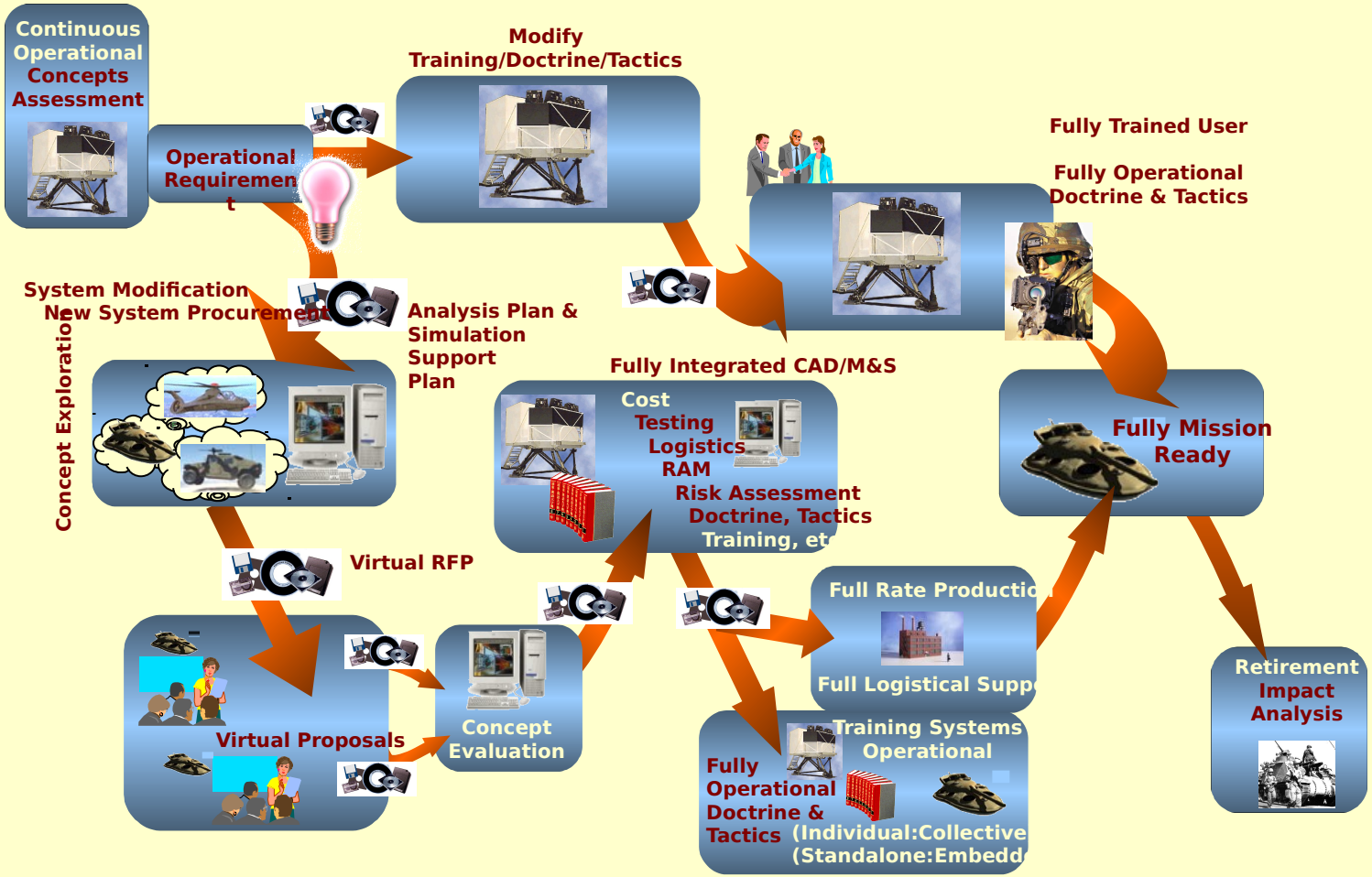
**The Army is transforming to be prepared for the full spectr of warfare and to be prepared for the wars of the future**

**Objective is a lighter, more agile, more sustainable, and more lethal force**

**The Transformation Campaign Plan calls for beginning the transition from the Interim force to the Objective Force by**

**The Army recognizes that the only way to achieve the transformation is with the help of M&S**

# SMART Concept



# Senior Leadership Support

***The SMART initiative has now matured and extended beyond the responsibility of any single M&S domain within the Army. To further institutionalize SMART, the Army M&S Executive Council (AMSEC) will provide leadership and be the proponent for SMART with the Army M&S Office (AMSO) serving as Executive Agent.***

***To ensure continuity during the changeover, a SMART transition function has been established to migrate all SMART responsibilities to AMSO.***

LARRY R. ELLIS
Lieutenant General, GS
Deputy Chief of Staff
for Operations and Plans

PAUL J. KERN
Lieutenant General, GS
Military Deputy to the
Assistant Secretary of the
Army (Acquisition, Logistics
and Technology)

Walter W. Hollis
Deputy Under Secretary of the Army
(Operations Research)

# Designated Executive Agent
# - AMSO -

- Developed the Simulation Support Plan Guideline
- Developed the SMART Execution Plan
- Hosted the SMART Conference Series
- Coordinating Execution Plan Implementation
- Conducting  SMART Education
- Compiling a “Best Practices Manual”

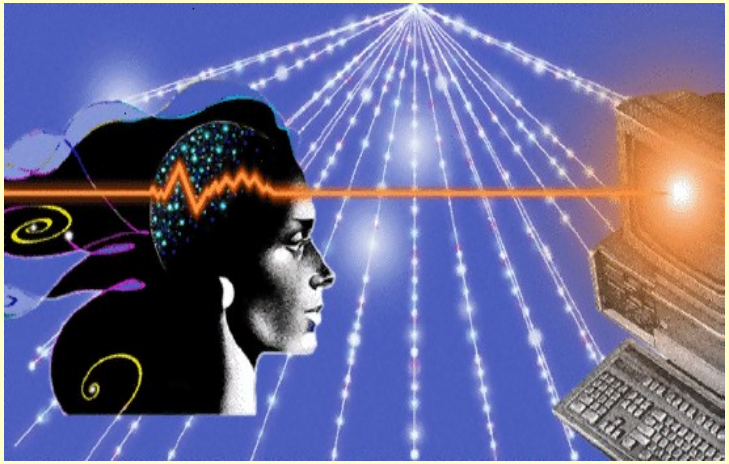
# SMART Initiative

- Execution Plan Endorsed by the AMSEC in the Fall of 2000
- Identifies SMART Enablers
- Aligned with The Technical Control Panel (TTCP) Enablers
- Currently Eleven Objectives with Supporting Tasks

# How We Intend to Invest in SMART

- Strategy is from an Enterprise Perspective:
- Investing in SMART infrastructure:
  - Collaborative Environments
  - Architecture
  - New cost and analytic tools
  - SMART Environments
  - Education

# Collaboration is the Heart of SMART



Collaboration With
Contractors…

Entertainment Industry…

Government
Organizations…

Collaboration Across
Functional Areas…

Collaboration with
Academia…

Milestones…

Programs…

**Collaborative Environments**

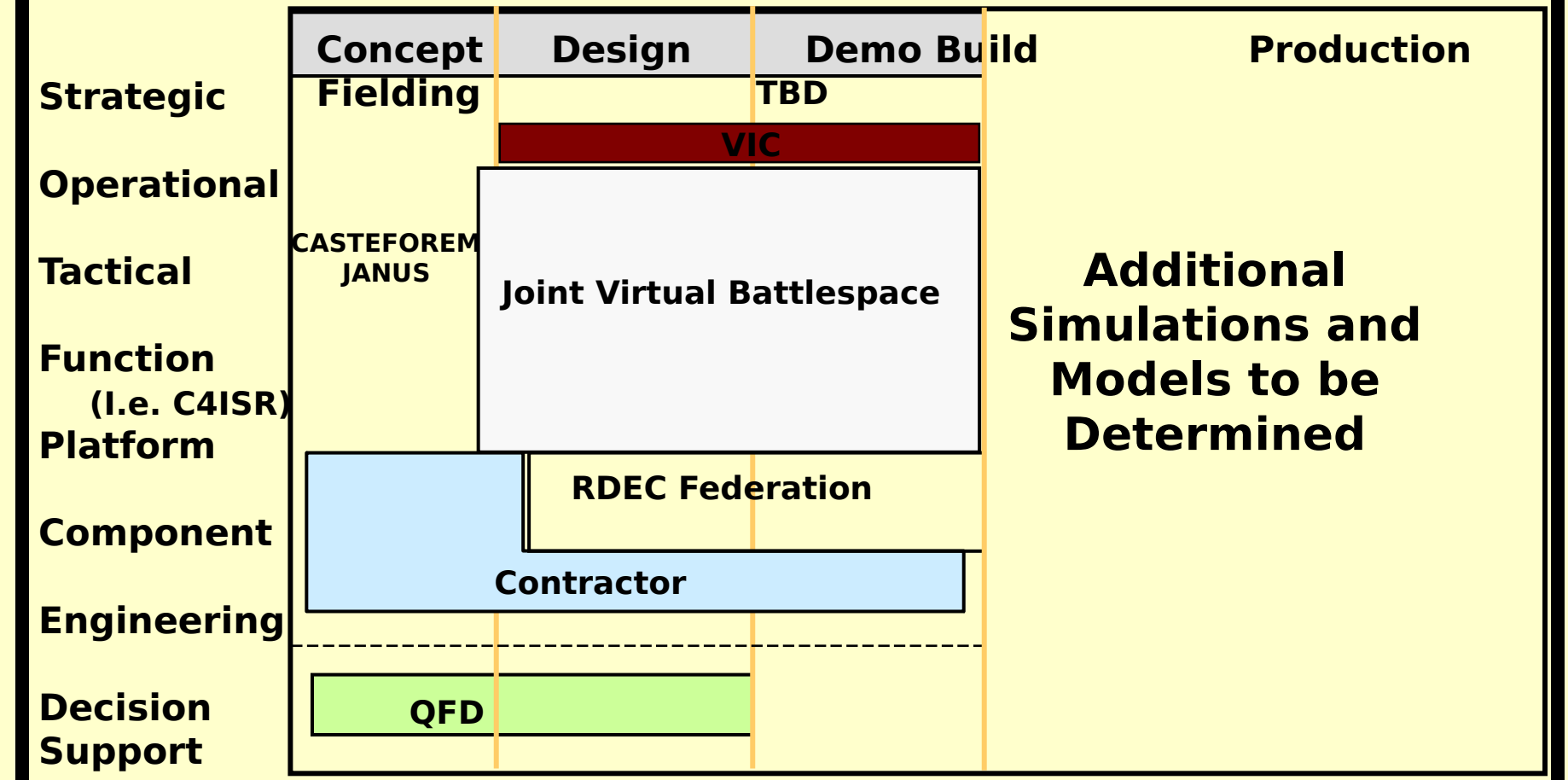
# Architectural Principles

- **Generalization is not free nor is it always the best answer**
- **The worst thing you can do is spend a lot of money on technology**
- **There is no right answer**

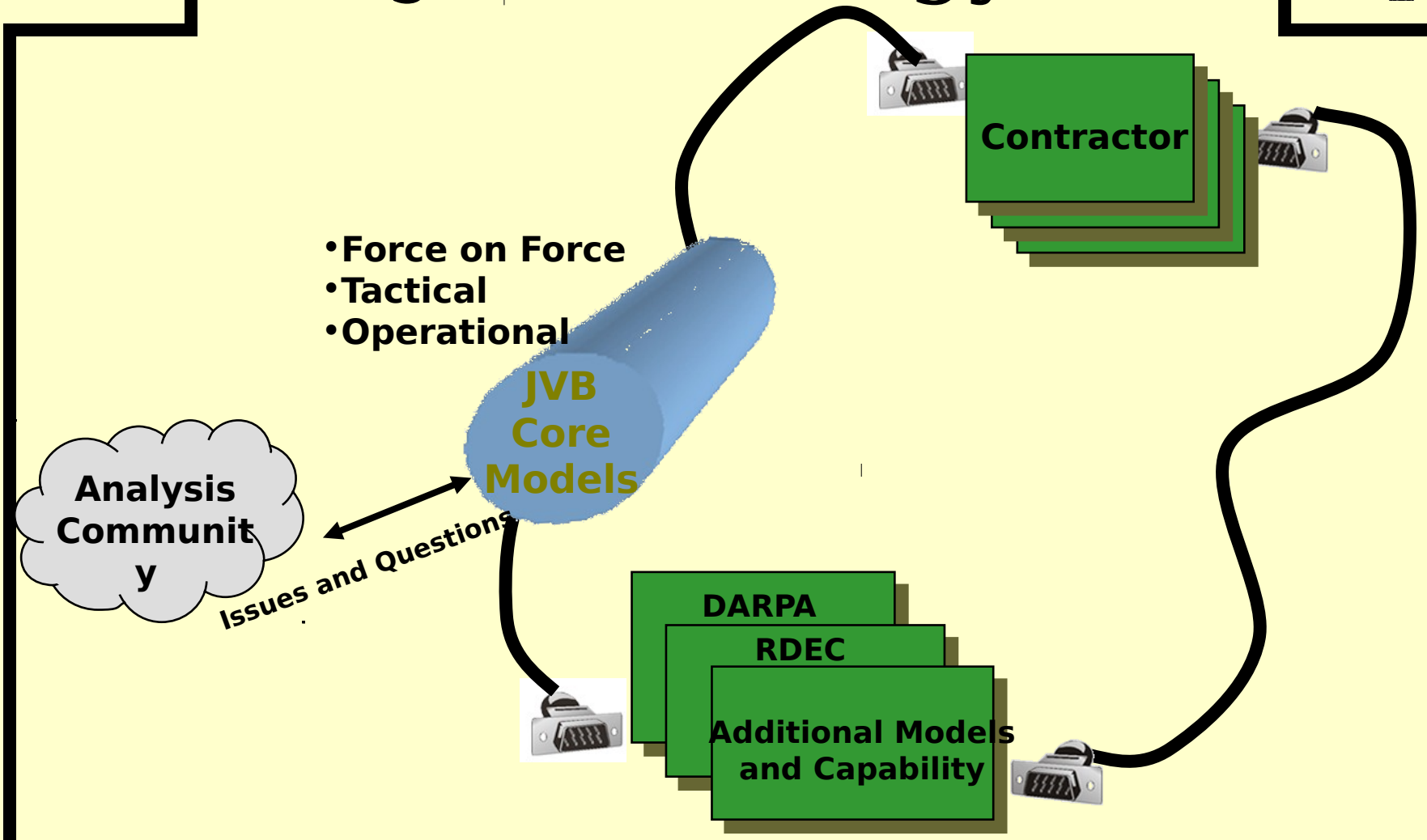
**SMART Execution Plan focus:**

- Develop a collection of reference models,
- Leverage Federation efforts,
- Develop standards for data and information exchang
- Document and promulgate

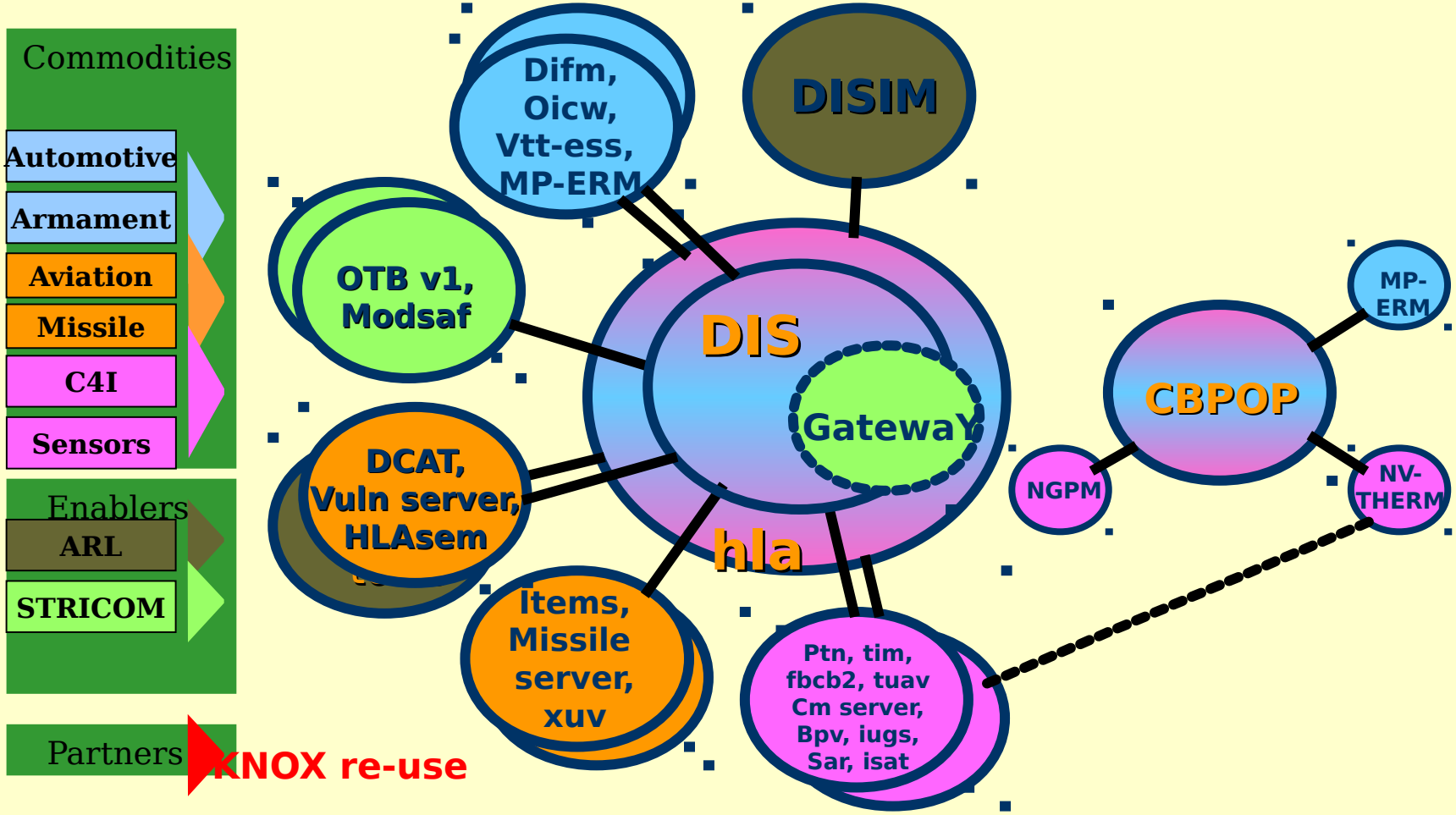
# Potential Operational Architecture Option for the FCS Program



# JVB Strategy



# AMC RDEC Federation



# Changing the Culture

- SMART Conferences
- SMART Tutorials
- Participation in school curricula:
  - Command & General Staff College
  - U.S. Military Academy
  - Army Logistics Management College
  - Defense Systems Management College
  - Force Management School

# The Army's Transformation Is Dependent on SMART

- M&S is required to meet the timelines specified and remain within the budget constraints

- The SMART Execution Plan is intricately woven throughout to the Army's Transformation Campaign Plan

**"To obtain the Objective Force as rapidly as possible, the Army will maximize use of the SMART initiative." Army Modernization Plan 2001**

# Transformation Centerpiece

- Future Combat Systems Program exemplifies the SMART approach
- Jointly funded by DARPA and the Army
- Developing Collaborative Environments
- Planning Virtual Prototypes to be submitted by the contractor bidders

FCS is tomorrows Case Study

# SMART Best Practices Manual

- Purpose is to harvest SMART Best practices
- Designed to support the Army Transformation
- Guide future investments
- Will be a living document

# SMART Best Practices Outline

- Conceptual Use of M&S
- Program Office M&S
- Architectural Concept
- Source Data
- Result Data
- Terrain / Synthetic Natural Environment
- Model Representations
- Live-Synthetic Interoperability
- C4I to Simulation Interoperability
- Run Time Data Interchange
- Algorithms
- Security
- Programmatic Issues

# SMART Web Page

Learn more about SMART at AMSO's web page:

**http://www.amso.army.mil/smart/**

# Conclusion

- The timeline for the Army Transformation has made SMART a key enabler
- Watch FCS as an indicator of our success
- SMART Best Practices will support FCS and other future Army acquisitions

# Back Up

# Lessons Learned Through Acquired Experience

**Apache**
(Legacy system upgrades using M&S)

**Crusader**
(Relied heavily on M&S to support systems engineering)

**Comanche**
(Down select based on M&S)

**Grizzly**
(Revitalized the program with M&S)

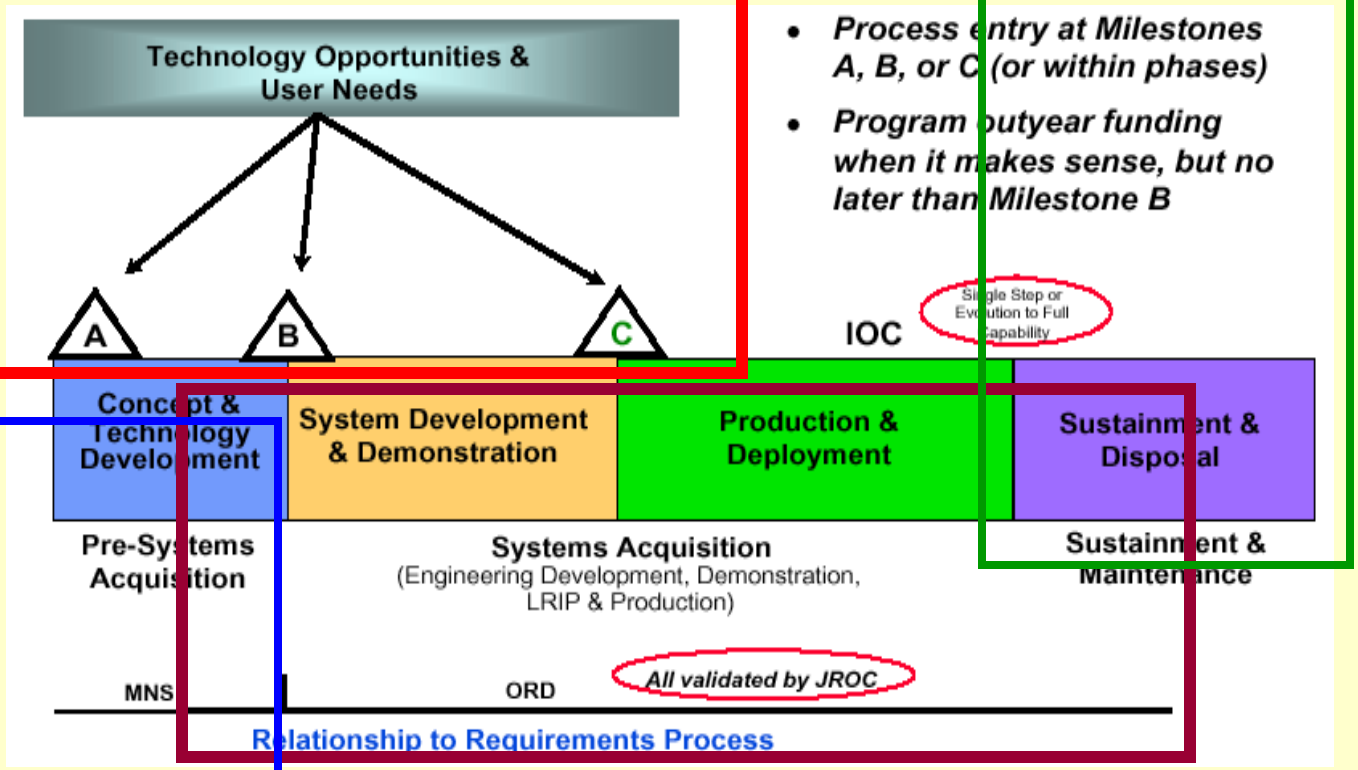
**Aerial Common Sensor**
(Using virtual prototypes for source selection)

**Future Scout and Cavalry System**
(Collected Data)

# Themes

Experimentation and its impact on acquisition

Training




Environments supporting the development

Architectures as an acquisition blueprint